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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/288,589	04/08/1999	EDWARD PETER SOCCI	30-4424	7650

7590

04/29/2002

HONEYWELL INTERNATIONAL INC.
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EXAMINER

JOHNSTONE, ADRIENNE C

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 04/29/2002

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

Applicant(s)

09/288,589

SOCCI ET AL.

Examiner

Art Unit

Adrienne C. Johnstone

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 7,8,12 and 23-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9-11 and 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other: See PTO-948 attached to Paper Number 12.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I and the species wherein the at least two plies are three plies and the fiber reinforcement in a third dimension is folds forming the edges of the longitudinal direction, claims 1-6, 9-11, and 13-22 in Paper No. 14 is acknowledged. The traversal is on the ground(s) that there was no showing of both independence and distinctness. This is not found persuasive because distinctness was clearly set forth in the restriction requirement and the "independent and distinct" requirement has been met in view of Congressional legislative history as discussed in MPEP 802.01.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 7, 8, 12, and 23-28 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 14.

3. As noted in Paper Number 12 paragraph 16, none of the claims withdrawn from consideration have been rejoined at this time because none of these claims incorporates all of the limitations of a fiber-reinforced article claim allowable in substance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6, 9-11, and 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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There are still numerous antecedent basis problems in the claims. To overcome this rejection applicants may make the following amendments to the claims.

claim 1

last line, after "23°" insert -- with respect to the longitudinal direction of the article -- (specification p. 8 lines 27-30).

claim 5

line 2, change "a orientation" to -- a ply orientation -- (clean copy of the claim is missing the word "ply" added in the marked-up copy of the claim).

claim 11

line 1, after "wherein" insert -- said third dimension of reinforcement comprises folds and -- (folds not required in claim 11).

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-4, 9-11, and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by British Patent Specification 1 310 316.

See p. 2 line 41 - p. 7 line 11, p. 9 line 39 - p. 10 line 3, and p. 10 lines 10-14, 25-29, and 36-40: 1000 denier/2/2 polyethylene naphthalate cord with an as-manufactured fiber modulus of 300,000 kg/cm² and a cord twist of 5/10 cm - 1.3/inch has a twist multiplier of 1.3/inch x (4000 denier)^{1/2} = 82 and a Young's modulus of about 270,000 kg/cm², p. 6 lines 20-25; corded rubber sheet made with this cord has a maximum Young's modulus of 40,000 kg/cm², p. 6 lines 43-47; cord angle α , $-\alpha$ for three-sheet breaker belt is $18\pm 5^\circ$ or $13-23^\circ$, p. 10 lines 10-14; cord angle β , $-\beta$ for four-sheet breaker belt is $24\pm 5^\circ$ or $19-29^\circ$, p. 10 lines 25-29; cord angle α , $-\alpha$, α , $-\alpha$ for six-sheet breaker is $18\pm 5^\circ$ or $13-23^\circ$ and cord angle β , $-\beta$ for six-sheet breaker belt is $18\pm 8^\circ$ or 10-

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26°, p. 10 lines 36-40; applicant has confirmed that such polyethylene naphthalate cords inherently possess the claimed compressive modulus (specification p. 9 lines 9-19 and pp. 2-3 of the remarks accompanying the amendment filed January 8, 2002), since such as-manufactured polyethylene naphthalate fibers for use in tire cord applications would be understood by one of ordinary skill in the art to necessarily have a denier per filament within applicants' broad range of greater than or equal to about 2 in order to perform their tire-reinforcing function. As to the stress at 1% strain requirement, the close correspondence of materials and properties (polyethylene naphthalate cord tire belt with the claimed cord twist multiplier, initial compressive modulus, and initial tensile modulus) provides a reasonable basis for the examiner to infer that the polyethylene naphthalate cords in the reference tire belt also meet the stress at 1% strain requirement; the burden of proof therefore shifts to applicants as in *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980). See MPEP 2112 and 2112.01. As to claims 10 and 11, see the folded belt structure described at p. 2 lines 42-55 and depicted in Figure 3. As to claims 18-21, the close correspondence of materials and properties (polyethylene naphthalate cord tire belt with the claimed cord twist multiplier, initial compressive modulus, cord angle, and initial tensile modulus) provides a reasonable basis for the examiner to infer that the polyethylene naphthalate cord tire belt of the reference also meets the in-plane shear modulus and fatigue requirements; the burden of proof therefore shifts to applicants as in *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980). See MPEP 2112 and 2112.01.

8. Claims 1-3 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Inada et al. (5,246,051).

See the tire belt example 1 in col. 10 line 50 - col. 15 line 51: cord angle of 23°, twist multiplier of $1/1.6 \text{ cm} \times (2 \times 1500 \text{ denier})^{1/2} - 1.6/\text{inch} \times (3000 \text{ denier})^{1/2} = 88$, compression modulus - $109,300 \text{ kg/cm}^2$, cord stress at 1% strain - $(74,200 \text{ g}/3000 \text{ denier})/4.4 = 5.6 \text{ g/denier}$. Similarly, see

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tire belt example 2 wherein the twist multiplier is $1/2.5 \text{ cm} \times (5 \times 720 \text{ denier})^{1/2} = 1/\text{inch} \times (3600 \text{ denier})^{1/2} = 60$, compression modulus = $103,300 \text{ kg/cm}^2$, cord stress at 1% strain = $(90,000 \text{ g}/3600 \text{ denier})/4.2 = 5.9 \text{ g/denier}$. Similarly, see tire belt example 4 wherein the twist multiplier is $1/1.2 \text{ cm} \times (3 \times 1140 \text{ denier})^{1/2} = 0.8/\text{inch} \times (3420 \text{ denier})^{1/2} = 47$, compression modulus = $159,300 \text{ kg/cm}^2$, cord stress at 1% strain = $(79,200 \text{ g}/3420 \text{ denier})/3.3 = 7.0 \text{ g/denier}$.

Response to Arguments

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., exclusion of the Inada et al. epoxy resin impregnated cords) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Allowable Subject Matter

10. Claims 5, 6, and 13-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Although the claimed belt configurations are conventionally utilized in the tire art, applicants' unexpected results in the specification pp. 20-23 for the claimed fiber-reinforced article having the combination of particular cord twist multiplier, cord stress at 1% strain, cord initial compressive modulus, and cord angle overcome the possible obviousness rejections based on the prior art of record.

11. Favorable consideration would be given to claim 1 with the added limitation that the ply orientation angle is at least 30° , since the prior art of record fails to disclose or suggest such a combination of particular cord twist multiplier, cord stress at 1% strain, cord initial compressive modulus, and cord angle in the claimed environment.

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12. Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office Action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Conclusion

13. Due to the new grounds of rejection not necessitated by applicants' amendment, this action is not made final.

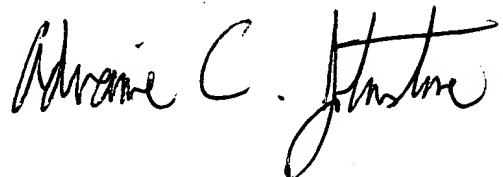
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrienne C. Johnstone whose telephone number is (703)308-2059. The examiner can normally be reached on Monday-Friday, 10:00AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703)308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9311 for regular communications and (703)872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Adrienne C. Johnstone
Primary Examiner
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Adrienne Johnstone
April 25, 2002

A handwritten signature in black ink that reads "Adrienne C. Johnstone". The signature is written in a cursive, flowing style.